

Unit 4

Day 5

Finding a Specific Term

Finding the  $k^{\text{th}}$  term of  $(x+y)^n$ .

formula:  $\binom{n}{r} x^{n-r} y^r$   $r = k - 1$

1) Find the <sup>3rd</sup> third term of  $(x^4 + 4y^2)^8$

$$r = 3 - 1 = 2$$
$$n = 8$$

Substitute:

$$\binom{8}{2} (x^4)^6 (4y^2)^2$$

Evaluate:

$$28 (x^{24}) (16y^4)$$

$$\binom{8}{0}$$

$$\binom{8}{1}$$

$$448 x^{24} y^4$$

1) Find the 6th term of  $(x - 2y)^{12}$

$$r = 5$$

$$n = 12$$

Substitute:  $\binom{12}{5} x^7 (-2y)^5$

Evaluate:  $-792 x^7 (-32 y^5)$   
 $-25344 x^7 y^5$